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Productivity in the UK

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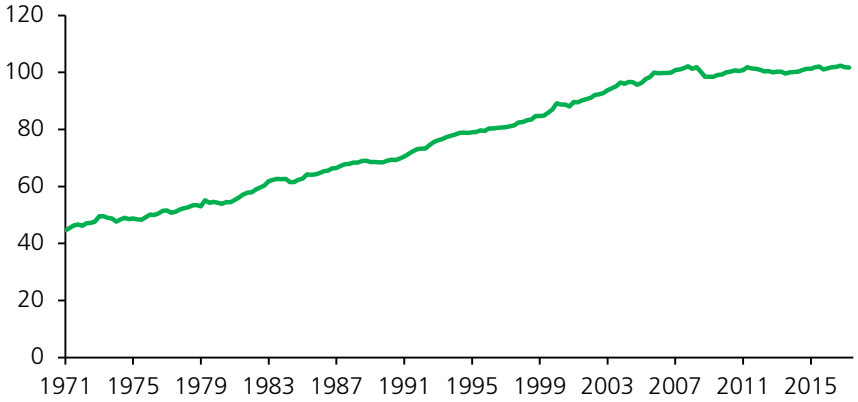
Summary

Productivity – how much is produced for a given input (such as an hour's work) – is directly linked to living standards, with a country's ability to improve its standard of living over time almost entirely dependent on productivity growth.

Productivity is also crucial in determining long-term growth rates of an economy. In other words, stronger productivity growth leads to stronger GDP growth. This, in turn, increases tax revenues and lowers government budget deficits. Of course, lower productivity growth results in the opposite: lower GDP growth and higher budget deficits.

Historically, UK labour productivity has grown by around 2% per year but since the 2008/2009 recession it has stagnated. The level of labour productivity in Q2 2017 was still 0.5% below what it was over nine years earlier in Q4 2007 (the pre-recession peak level). In Q2 2017, productivity was unchanged on a year earlier.

UK productivity levels, index where 2013 = 100
Output per hour worked (quarterly data)



The persistent weakness in productivity has puzzled economists and there are many alternative theories to explain it, including: weakness in investment that has reduced the quality of equipment employees are working with; the banking crisis leading to a lack of lending to more productive firms; employees within firms being moved to less productive roles; and slowing rates of innovation and discovery. None is sufficient on its own to explain entirely what has happened, making it difficult to predict when and if productivity growth will return to pre-crisis rates of growth.

There is additionality uncertainty following the Brexit vote. The UK's new trading arrangements with the EU and other countries will be important in determining its impact on productivity. Most economists believe the end result will be a less open economy to trade and foreign investment, likely lowering long-term productivity.

In 2015, the Government published a 15-point productivity plan designed to boost the future productivity. In November 2016, the Government announced a four-year £23 billion commitment to a National Productivity Investment Fund.

London has the highest levels of productivity, by some margin, of any region or country in the UK. Wales and Northern Ireland have the lowest.

International comparisons of labour productivity show that the UK was ranked fifth of the G7 countries, with Germany top and Japan bottom. In 2015, UK productivity was 19 percentage points below the rest of the G7 average, the same as in 2014 and the widest productivity gap since at least 1995 (when the data series began).

1. What is productivity?

Productivity generally refers to how efficiently inputs (labour and capital) are used to produce outputs (goods and services). Productivity is important as it is directly linked to living standards – a country's ability to improve its standard of living over time depends almost entirely on its ability to raise its output per worker.

Labour productivity is usually expressed as a ratio of units of output (often Gross Domestic Product (GDP) or Gross Value Added (GVA)[1]) to units of input (employment levels or hours worked in an economy). Output per hour is the purest measure of productivity, as it adjusts for changes in working hours such as more part-time working. This is the measure of productivity used throughout this note.

$$\textbf{Labour productivity (output per hour)} = \frac{\text{Gross Value Added (real terms)}}{\text{total number of hours worked in economy}}$$

However, data – and particularly historic data – on hours worked can be more difficult to find than the total number of people in work, so output per worker or output per job are also widely used.

Changes in any of these variables will affect productivity. For example, if GVA increases but hours worked remain unchanged, then productivity will also increase. However, if GVA remains unchanged but the total number of hours worked increases (for example if employment went up and average hours worked stayed the same) the result would be a fall in productivity – it took more hours to produce the same amount.

It is important to note that changes in labour productivity may be driven by a number of other factors, many of which have little to do with the innate qualities or efforts of employees. For example, an increase in capital or developments in technology will increase the amount of output for a given labour input, thereby raising observed labour productivity without labour necessarily becoming more efficient.

[1] Gross Value Added (GVA) is GDP excluding taxes (such as VAT) and subsidies on products.

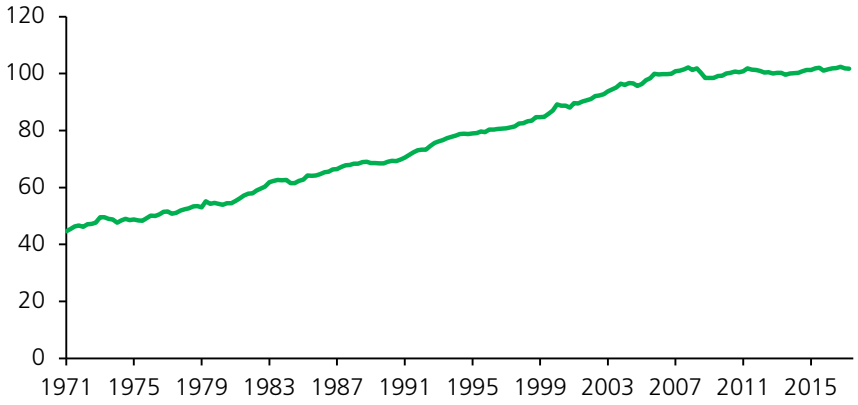
2. Productivity statistics

2.1 Recent data and historical trends

Productivity was growing at its historical average rate of around 2% per year in the decade prior to the 2008/2009 recession (as measured by output per hour worked). During the recession productivity fell sharply, as we would expect, with output falling faster than hours worked.

However, since then productivity has not rebounded as we would expect to see in an economic recovery.[2] The level of labour productivity in Q2 2017 was still 0.5% below what it was over nine years earlier in Q4 2007 (the pre-recession peak level).[3] The Office for National Statistics (ONS) has in the past described the stagnation in productivity over this period as "unprecedented in the post-war period".[4]

UK productivity levels, index where 2013 = 100
Output per hour worked (quarterly data)



As the chart above illustrates, the flat level of productivity since the recession is particularly notable given the growth seen in previous decades.[5]

From mid-2014 to mid-2015, there were signs that productivity growth was recovering, with average annual increases of 1.3% between Q3 2014 to Q3 2015. However, a sharp quarterly decline in the final quarter of 2015 reversed that trend.

In 2016, quarterly growth in productivity was in the range 0.2-0.5%. Overall in 2016, productivity increased by 0.4% compared with 2015. In Q1 2017, productivity fell by 0.5% on a quarterly basis and it fell again in Q2 2017 by 0.1% (it was unchanged compared with a year before).[6]

Output per hour worked in the UK
Annual % change

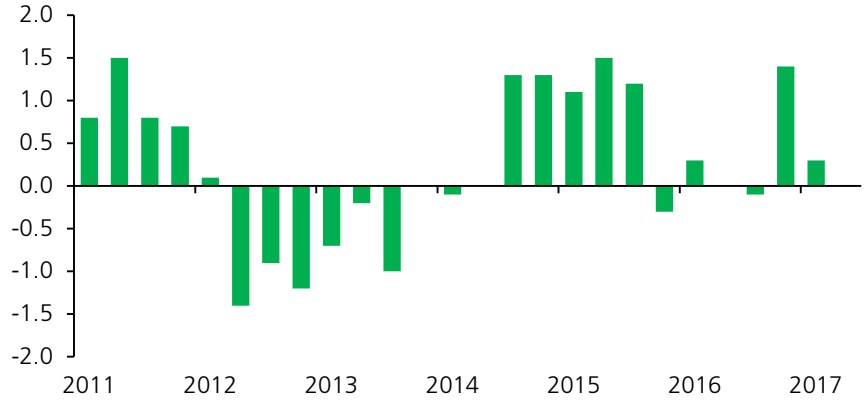
2007	1.6
2008	-0.9
2009	-1.6
2010	1.6
2011	0.9
2012	-0.9
2013	-0.4
2014	0.6
2015	0.9
2016	0.4
2016 Q2	0.3
2016 Q3	-0.1
2016 Q4	-0.1
2017 Q1	1.2
2017 Q2*	0.0

Source: ONS series LZVD
*estimate from 'flash' Q2 2017 release

See annex table 1 for further historical data

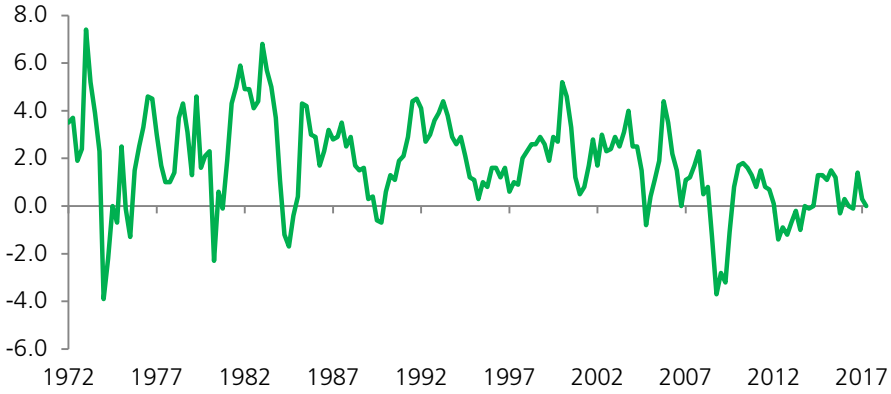
[2] Recent trends in UK productivity are also summarised in the Library Economic Indicator page on Productivity and in the latest quarterly ONS release.
[3] For more on the reasons behind the "productivity puzzle" see "Productivity puzzles - speech by Andy Haldane (Bank of England Chief Economist)", 20 March 2017 and Barnett, A, Batten, S, Chiu, A, Franklin, J and Sebastiá-Barriel, M (2014), "The UK productivity puzzle", *Bank of England Quarterly Bulletin 2014 Q2*
[4] ONS, *Labour Productivity, Q4 2014*, 1 April 2015
[5] A 2012 paper "Benchmarking UK Competitiveness in the Global Economy" from the then Department for Business, Innovation and Skills noted that there was "rapid productivity growth since the 1980s", although "since the 2000s the rate of progress has slowed".
[6] ONS, *UK productivity flash estimate: April to June 2017*, 16 August 2017

Productivity growth, annual % change
Output per hour worked (quarterly data)



The chart below shows the annual percentage change in productivity in the UK economy since 1972. The decline in productivity at the onset of the 2008/2009 recession was the largest annual fall since 1974 when there was a three-day working week in the UK.

Output per hour worked in the whole economy, UK
Quarterly data, annual % change



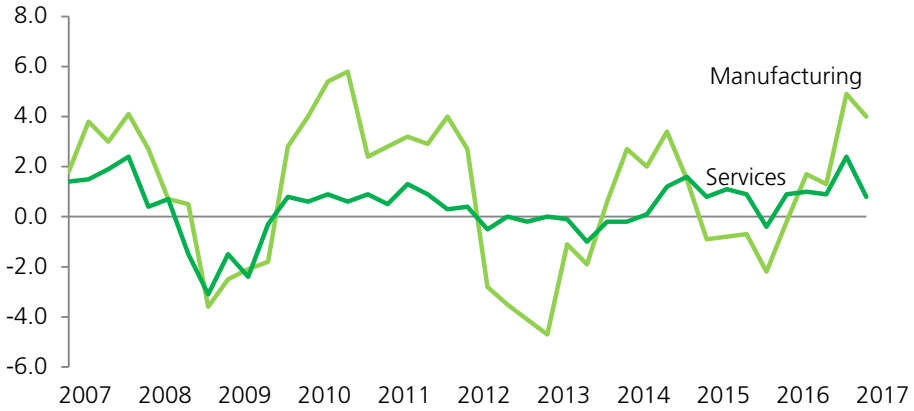
2.2 Productivity by sector

Prior to the 2008/2009 recession, productivity in both the manufacturing and services sectors had risen in every year from 1997 to 2007. At the end of 2008 and early 2009 productivity fell sharply as a result of steep declines in output. As the UK exited from recession, productivity in both sectors began to recover, with manufacturing in particular seeing good growth. However, productivity in both sectors fell again during 2012 and 2013.

Productivity in manufacturing has been volatile in recent years: it grew in 2014, fell back into negative territory in 2015, and then saw strong growth toward the end of 2016 and into 2017. In Q1 2017 productivity was 4.0% higher compared with the year before.

Meanwhile, services productivity growth overall has been subdued in recent years. In Q1 2017 growth was 0.8% compared with a year before.

Output per hour worked
% change on previous year; quarterly data



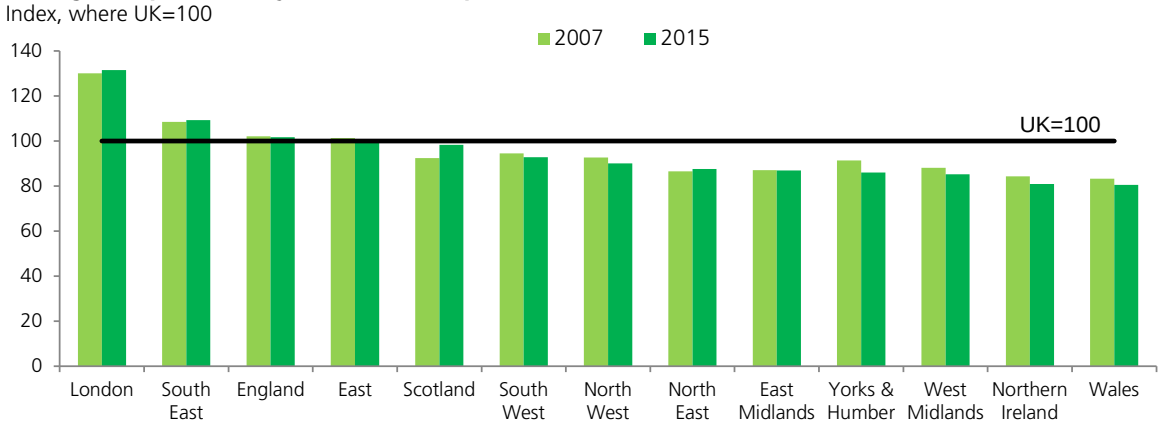
2.3 Productivity by region

The data for regional productivity uses nominal GVA rather than real GVA. In other words GVA is not adjusted for price changes: "this means that if prices were to rise more quickly in one region than the others, then it would be reflected in improved measured productivity in that region relative to the others".[7]

Regional productivity in the UK in 2007 and 2015 (latest available data) is shown below, calculated as output per hour worked relative to the UK as a whole (UK=100). Figures on regional productivity going back to 1997 can be found in annex table 2.

See annex table 2 for further historical regional data

UK regional productivity, nominal GVA per hour worked
Index, where UK=100



London has the highest level of productivity of any region or country in the UK, 32% higher than the UK average in 2015. The only other region with productivity above the UK average in 2015 was the South East (9% above the UK).

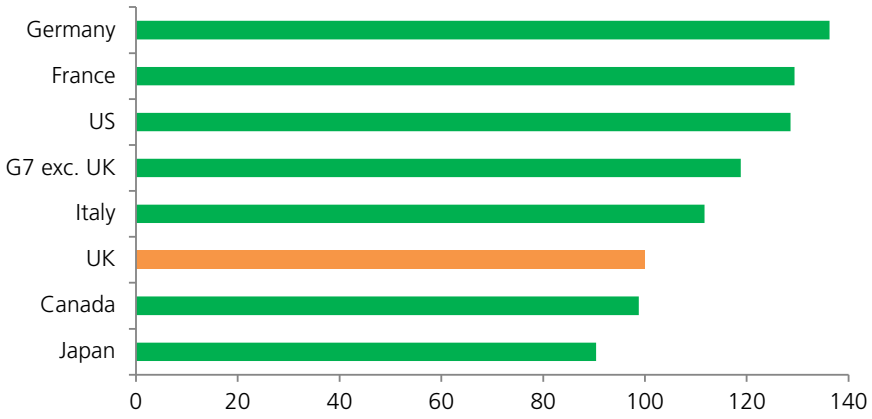
In 2015, 4 of the UK's 12 regions or countries had higher levels of productivity relative to the UK then they did in 2007, with the largest relative rise between 2007 and 2015 being in Scotland and the largest relative fall being in Yorkshire and the Humber.

[7] ONS, Labour productivity – notes on sources, Sept 2012; real terms (inflation adjusted) regional GVA data is published by the ONS but only on an experimental basis. Real-terms data for Scotland is published by the Scottish Government.

3. International comparisons

The ONS also publishes international comparisons of productivity. Estimates for 2015 show that, based on GDP per hour worked, the UK was ranked fifth of the G7 countries, with Germany top and Japan bottom.[8]

GDP per hour worked, 2015, where UK = 100



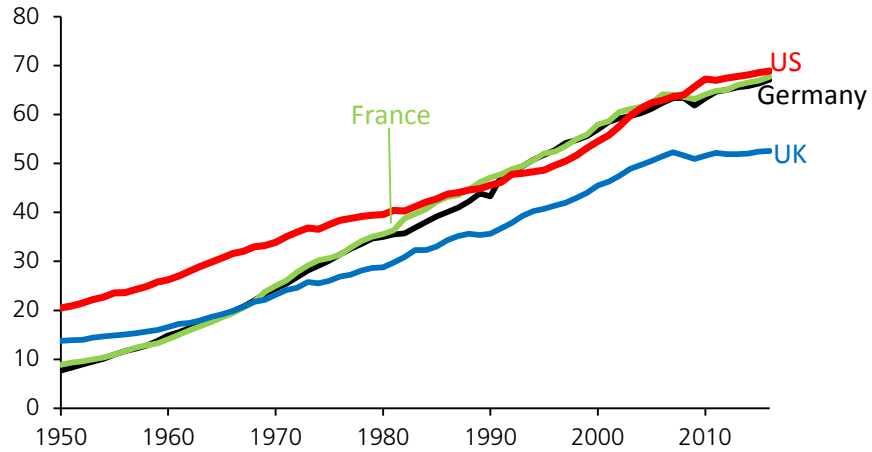
UK productivity was 19%-points below the average of the rest of the G7 countries, the same productivity gap as in 2014 and the largest since at least 1995 when the ONS data series began. Since 2007, only Italy has seen weaker productivity growth than the UK among G7 countries.

Productivity in the UK is 19%-points lower than the average for the rest of the G7

The international data series from the ONS going back to 1995 can be found in table 3 of the appendix below.

Another source of international productivity data is compiled by the Conference Board in the US as part of their "Total Economy Database" using data from a variety of sources, including Eurostat and the OECD.[9] This has a time series going back to 1950. Comparisons of the UK, Germany, France and the US are shown in the chart below.

GDP per hour worked, in 2016 US$



Source: Conference Board, Total Economy Database, May 2017

8 ONS, International comparisons of UK productivity (ICP), final estimates,5 April 2017
9 The Conference Board, Total Economy Database - Output, Labor, and Labor Productivity, 1950 - 2017, May 2017 release

4. Why productivity growth is important for the economy

4.1 Productivity is essential for rising living standards

Few economists would disagree that productivity growth – commonly defined as rising output per worker, or output per hour worked – is essential for long-term increases in living standards.

The more productive an economy is, the more can be produced in a sustainable fashion. In other words, higher productivity growth leads to a higher long-term growth rate of the economy.

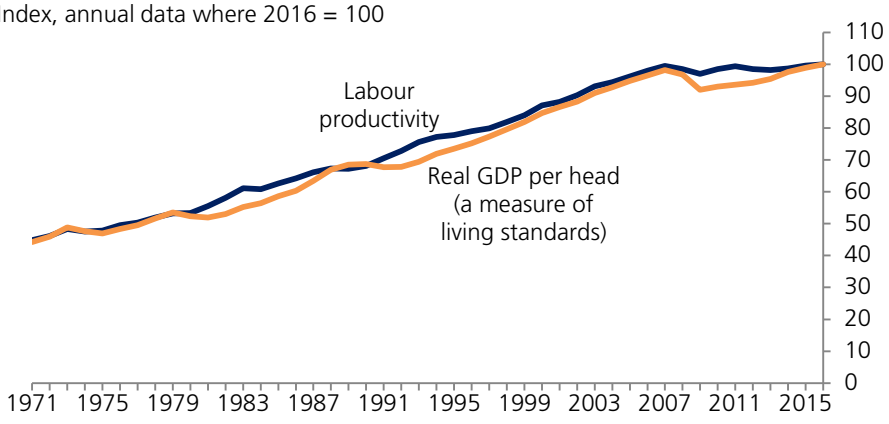
Economic theory states that labour productivity – the value of output per hour worked – also determines wages: the more productive an employee is, the more they are likely to be paid. Productivity growth is therefore necessary for sustainable improvements in living standards and wages.

Since 2007 productivity and living standards have stalled

Historically, labour productivity in the UK has grown at around 2% per year, but in the nine years since the recession began, it has stagnated (see chart below). The Office for National Statistics has said that this is "unprecedented in the post-war period".[10] GDP per head has performed a little better but was only 1.8% higher in 2016 than it was in 2007 (before the recession began).

Labour productivity and GDP per head broadly flat since 2007

Index, annual data where 2016 = 100



Source: ONS; labour productivity is output (real gross value added) per hour worked

Economic growth during the recovery from the 2008/2009 recession – weak over the first few years, but stronger since early 2013 – has been attained by increases in the total number of hours worked in the country, instead of increases in productivity.

GDP growth in recent years has largely been due to more hours being worked in the economy rather than higher productivity

[10] ONS, *Labour Productivity, Q4 2014*, 1 April 2015

In other words, in recent years there has been a large increase in the number of people employed and a large decline in the number unemployed – it is this increase in total hours worked in the economy that has led to more goods and services being produced (higher GDP) since 2007, instead of higher productivity. This weakness in productivity translated into a stagnation in wages and living standards for a number of years after the recession technically ended in 2009.

Most economists expect productivity growth to improve back towards its historic trend or at least get close to it (see next section); but if it doesn't, the implications for the economy, public finances and future living standards could be stark.

4.2 How productivity affects the economy and public finances

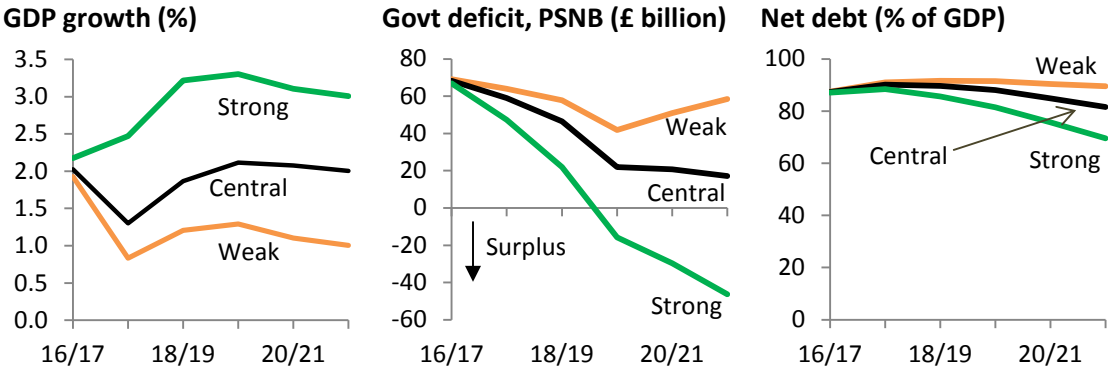
To illustrate the importance of productivity to the economy, the Office for Budget Responsibility (OBR), the independent fiscal watchdog, in November 2016 produced some forecasts based on three differing assumptions of trend productivity growth[11]. These were:

(i) a **weak** productivity scenario – a continuation of current trends– with trend productivity growth of 0.8% per year;

(ii) the OBR's **central** scenario, where trend productivity growth rises to 1.8%; and

(iii) a **strong** productivity scenario where trend productivity growth of 2.8% is recorded.[12]

Box 1: OBR forecasts (November 2016) for economic growth, the deficit and debt under three productivity scenarios



The charts in the box above show how faster productivity growth leads to stronger GDP growth. This, in turn, leads to higher tax revenues, which results in a lower government budget deficit and a reduced debt-

[11] Trend productivity growth is the rate of productivity growth that occurs in a theoretical world where the economy is operating at its full potential, generating sustainable growth and not overheating or entering into a downturn.

[12] OBR, Economic and fiscal outlook, November 2016, pp217-20

to-GDP ratio. The differences are stark: the weak productivity scenario results in GDP growth of just 1.0% by 2021/22, compared to growth of 2.0% in the OBR's central scenario and of 3.0% under the strong productivity scenario.

OBR (Nov. 2016) forecasts for 2021/22 based on different productivity scenarios

Scenario	GDP growth	Public sector net borrowing	Public sector net debt
	% change	*£ billion*	*% of GDP*
Weak productivity	1.0	58.5	89.6
Central Scenario	2.0	17.2	81.6
Strong productivity	3.0	-46.3	69.5

Source: OBR, Economic and fiscal outlook, Nov 2016, pp217-20

Note: Negative public sector net borrowing indicates a budget surplus

5. Is productivity stagnation temporary or permanent?

The recent period of productivity stagnation raises important questions, including: is this just a temporary diversion from historical trends resulting from the financial crisis and recession? Or is it a sign of things to come, with permanently weaker productivity growth and therefore smaller rises in living standards over the long term?

5.1 Possible reasons for productivity stagnation

The persistent weakness in productivity has puzzled economists and there are many alternative theories to explain it:

- falling productivity in the oil and gas, and financial sectors;
- weakness in investment that has reduced the quality of equipment employees are working with;
- the banking crisis leading to a lack of lending to more productive firms;
- employees within firms being moved to less productive roles;
- slowing rates of innovation and discovery;
- an ageing population;
- inaccuracies in the data.

None is sufficient on its own to explain entirely what has happened and this makes it difficult to predict when and if the weakness in productivity growth will come to an end.[13]

[13] More detailed analysis of the causes of the UK's productivity puzzle can be found in "Productivity puzzles - speech by Andy Haldane (Bank of England Chief Economist)", 20 March 2017, Barnett, A, Batten, S, Chiu, A, Franklin, J and Sebastiá-Barriel, M (2014), "The UK productivity puzzle", *Bank of England Quarterly Bulletin 2014 Q2*, while an overview of the issues is provided in *Financial Times*, "Weighing up four theories on the UK's productivity gap", 19 April 2015

5.2 Forecasts

Bank of England

In its August 2017 Inflation Report, the MPC revised slightly lower its productivity growth forecast for 2017 from ¾% in its May 2017 report to ½% on the back of weaker data. It also lowered its 2018 forecasts a little from 1¾% growth to 1½%. 2019 forecasts were unchanged at 1½%.[14]

Bank of England's MPC productvity forecasts

Annual change (%)

	Aug '17 forecasts	May '17 forecasts
2016	..	..
2017	½	¾
2018	1½	1¾
2019	1½	1½

Source: BoE, Inflation Report Aug'17. table 5.D and previous Inflation Report

The MPC stated that despite the forecast improvement in the next few years, it "expects underlying productivity growth to remain well below its pre-crisis average rate over the forecast period".[15] Its explanation for this includes weakness in past business investment:

> The low level of business investment continues to lead to relatively slow growth in the capital stock — the resources and equipment available to workers to produce output — which will weigh on productivity growth.[16]

The MPC also stated that firms' preparation for Brexit would also influence future productivity growth:

> Productivity is also likely to be influenced by companies' expectations about, and preparations for, Brexit. For example, if trading arrangements are expected to be less open for a period, the resultant need for some companies to reorient their business models is likely to weigh a little on productivity growth.[17]

The August 2016 *Inflation Report* contained some analysis of the issues surrounding the longer-term path of productivity in the wake of the EU referendum vote. This issue, and some of the MPC's comments on it, are covered in section 6 of this briefing looking at the implications of Brexit on longer-term productivity.

Office for Budget Responsibility (OBR)

In March 2016, the OBR responded to the poor Q4 2015 productivity figures (see section 2.1) by lowering its forecasts. It had previously expected the improvement in productivity in first three-quarters of 2015 to herald a return to pre-crisis rates of growth. The reversal of this trend

14 Bank of England, *Inflation Report*, August 2017, section 5, table 5.D, p36
15 Bank of England, *Inflation Report*, August 2017, section 5, p34
16 Bank of England, *Inflation Report*, August 2017, section 3.2, p22
17 Bank of England, *Inflation Report*, August 2017, section 5, p34

at the end of the year seems to have exhausted the OBR's patience in waiting for a return to normality.[18]

As a result, the OBR reduced its forecast for the economy's potential productivity growth rate (the long-term maximum sustainable rate) from 2.2% to 2.0%.[19]

In its November 2016 forecasts, it left this long-term trend productivity rate unchanged, but lowered its assessment of productivity growth over the next five years. The OBR cited lower investment due to uncertainty surrounding the Brexit negotiations as the main factor for this downgrade:

> …we do expect uncertainty to reduce investment and productivity growth in the run-up to – and in the transition phase after – the UK's exit from the EU.[20]

As a consequence of this change, forecasts for GDP growth were cut and, in turn, forecasts for the budget deficit were raised (among other reasons like increased government capital spending). [21]

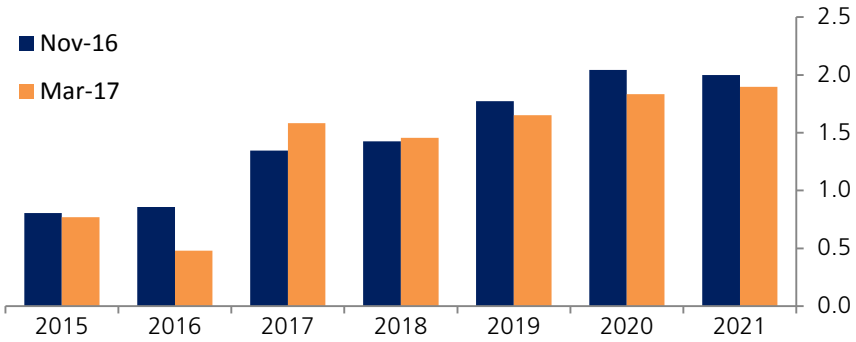
As already mentioned, the OBR has not changed its pre-referendum expectation of the economy's long-run productivity growth rate. Specifically the OBR stated that, unlike a number of other organisations, it did not lower this to reflect expected lower trade intensity that is expected after Brexit:

> We have not revised trend productivity growth lower explicitly to reflect lower trade intensity (as the Treasury did in its pre-referendum analysis) given the lack of certainty around this link.[22]

(For more on the potential impact of Brexit on productivity see section 6 below.)

In March 2017, the OBR's forecasts were little changed compared with November's.[23]

OBR's productivity growth forecasts little changed in March 2017
Annual % change in productivity per hour



Source: OBR Nov. 2016 and Mar. 2017 *Economic and fiscal outlook*; forecasts are for non-oil GVA divided by total hours worked

18 OBR, *Economic and fiscal outlook*, March 2016, p5, para 1.3
19 OBR, *Economic and fiscal outlook*, March 2016, p41-42, paras 3.17-3.20
20 OBR, *Economic and fiscal outlook*, November 2016, p43-4, paras 3.22-3.24
21 OBR, *Economic and fiscal outlook*, November 2016, p93, table 3.7
22 OBR, *Economic and fiscal outlook*, November 2016, p9
23 OBR, *Economic and fiscal outlook*, March 2017

Uncertainty associated with forecasts and implications

Productivity forecasts are usually prefaced with the caveat that there is considerable uncertainty surrounding them. This is especially the case in the wake of the vote for Brexit. What can be predicted is that, with the proportion of people in work at historic highs, there is only limited room for growth in the economy to be driven by hiring more people. For growth to continue for much longer at its recent pace of 2.0-2.5% a year, the productivity of existing employees will need to improve. If this does not happen, then we can expect growth to slow and the public finances to deteriorate compared with current expectations.

6. Implications of Brexit

The impact the June 2016 vote to leave the European Union will have on the long-term productivity potential of the UK economy is "highly uncertain" in the words of the Bank of England.[24] This section looks at the channels through which Brexit can affect future productivity – and growth – prospects.

6.1 How trade and foreign investment can boost productivity and growth

Productivity is a crucial contributor to a country's long-term economic growth potential – the rate at which it can grow sustainably over many years.

The impact of Brexit on productivity will be felt principally via trade and investment. Economic theory and academic literature show a link between an economy's degree of openness to foreign trade and investment and its productive capacity.[25] The main ways in which greater openness can result in increased productivity are:

- **More investment** – the most direct and obvious impact of foreign investment is that it increases amount of capital in the economy (machinery, computers, software, tools and other equipment) which leads to higher labour productivity growth

- **New technologies** – foreign investment is often associated with the introduction of technological innovation and better work practices that are then adopted by in domestic firms (via supply chains for example) thereby boosting productivity

- **Competition** – with more foreign companies in the domestic market comes greater competition amongst firms, which drives innovation and improves efficiency

- **Specialisation** – easier access to large trading markets allows domestic firms to specialise and expand, achieving economies of scale (lower per unit production costs as companies expand) thereby improving productivity

There is some question about the causality of the relationship between openness and growth.[26] In other words, does greater openness lead to higher growth or does higher growth result in greater openness? It can also be hard to define and measure 'openness'.

Nevertheless, economists generally believe that for the reasons cited above, a more open economy boosts its long-term productivity prospects and, in turn, growth rates.

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[24] Bank of England, *Inflation Report*, August 2016, section 3.4, p28

[25] For instance, BIS and DFID, *Economic Openness and economic Prosperity*, Analytical paper, 2011; Bank of England, *EU membership and the Bank of England*, October 2015; Bank of England, *Inflation Report*, August 2016, p29

[26] See for instance Andersen, L. and Babula, R. (2008), *The Link Between Openness and Long-Run Economic Growth*, The Journal of International Commerce and Economics, US International Trade Commission

6.2 Potential impact of Brexit

The UK's new trading and investment relationships in a post-Brexit world, and its impact on the amount and pattern of trade and investment that takes place, will be important in determining Brexit's impact on productivity and economic growth.

New trading arrangements

Prior to the referendum, a raft of research was produced by economists, think tanks and the Government attempting to quantify the impact Brexit would have on future growth rates. Many of these looked at different scenarios related to the UK's future trading relationship with the EU and other countries.

In short, they found the greater the barriers to trade and investment the greater the reduction in the economy's long-term productivity and growth potential (compared to a scenario where the UK remained an EU Member State).[27]

With the UK currently a member of the Single Market, it is likely that it will be more difficult for UK companies to trade with the EU - and for EU companies to trade with the UK – following Brexit. The degree to which this is the case will depend on the type of trade relationship that is negotiated.

Box 2: Key UK-EU trade and investment statistics

The EU is the UK's largest trading and investment partner:

- 44% of all UK goods and services exports go to the EU (2016 data)[28]
- 53% of all UK imports come from the EU (2016)[29]
- 45% of the stock of foreign direct investment in the UK comes from the EU (£431 billion out of a total £950 billion in 2015)[30]

The UK's future trading arrangements with non-EU countries will also be important in determining Brexit's impact of future productivity and growth.

After leaving the EU, the UK will be able to negotiate its own trade agreements with non-EU countries. The UK will also likely have to renegotiate, if so desired, the trade deals the EU currently has in place with other countries.[31]

The end result of all the changes to the UK's trading arrangements with the EU and rest of the world will take time to develop and come into effect. Given the importance of UK-EU links in trade and investment a large majority of economists believe that the final post-Brexit settlement

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[27] For a summary of the various studies see House of Commons Treasury Committee, *The economic and financial costs and benefits of the UK's EU membership*, HC 122, May 2016,

[28] ONS, *Balance of Payments: Oct to Dec and annual 2016*, 31 March 2017, tables B and C

[29] Ibid.

[30] ONS, *Foreign Direct Investment involving UK companies: 2015*, December 2016, Inward table 3.1

[31] A closer look at possible future trade arrangements between the UK and EU is provided in the Commons Library briefing paper *Brexit: trade aspects*

will leave the UK economy less open.[32] For the reasons explained above, this would most likely lower the UK's long-term productivity and growth rates compared to a scenario where the UK had stayed in the EU.

And don't forget other concerns about productivity

It is worth reiterating that the current weakness in productivity growth in the UK (and much of the world's largest economies) has had nothing to do with the EU referendum.[33]

As discussed in sections 4 and 5, we don't have a firm understanding as to why this has happened and whether this is the 'new normal': very weak productivity growth compared with historical averages, resulting in lower growth in standards of living than we have been used to.[34]

In short, the impact of Brexit will be an important factor in the country's long-term prospects for productivity growth but is not the only thing to focus on. The serious concerns about future productivity prospects before Brexit remain.[35]

[32] A summary of some of these forecasts is provided in IFS, *Brexit and the UK's Public Finances*, 24 May 2016 , chapter 3.1, pp17-18

[33] See, for example, OECD Compendium of Productivity Indicators 2016: How far that little candle throws his beams, 26 May 2016

[34] A good summary of the UK economy post-financial crisis is provided in a speech by Sir Jon Cunliffe, Deputy Governor Financial Stability at the Bank of England, "The UK Economy Post Crisis: A Series of Unfortunate Events?", 24 February 2016

[35] For example as described in: Duncan Weldon, "Stunted growth: the mystery of the UK's productivity crisis", Guardian, 25 April 2016

7. Government policy

7.1 Industrial strategy

Prime Minister Theresa May's Government has placed a "strong industrial strategy" at the heart of its economic policies.[36] In January 2017, the Government published a green paper, *Building our Industrial Strategy*, setting out its key goals, which include productivity. Indeed, the Prime Minister in the foreword to the paper states simply "we have to raise our productivity" if the country's overall prosperity is to rise.[37]

The Government's stated objective of its industrial strategy is "to improve living standards and economic growth by increasing productivity and driving growth across the whole country."[38]

For more information on the Government's emerging industrial strategy see Commons Library briefing paper *Industrial strategy*.

Box 3: What is an 'industrial strategy'

'Industrial strategy' is traditionally understood as a set of government interventions which seek to support or develop specific industries – especially manufacturing, but not only. However, current usage of the term is much broader. Industrial strategy in recent times has been more about coordinating a wide range of economic policies to achieve particular objectives, which need not be purely economic. For example, an industrial strategy can have social and environmental aims.

[…]

Intervention in industry can occur with varying degrees of intensity:

- At one extreme, an intensive industrial policy could involve government taking full control of a particular industry through nationalisation.
- At the other extreme, government would allow domestic industries to collapse under the pressure of international competition, regardless of the importance of the industry in terms of employment or strategic advantage.

In recent decades, UK industrial policies can be placed somewhere between these poles. Governments have generally not taken ownership of key firms within sectors that they view as important, but neither have they allowed the market to completely dictate the industrial and geographical structure of the economy.

Interventions can take many forms, ranging from tax breaks and deregulation to strategic procurement decisions and specific investment in particular skills and places.

[Source: House of Commons Library briefing paper *Industrial strategy*]

7.2 Conservative Party manifesto 2017

The Conservative Party manifesto, released ahead of the June 2017 General Election, restates the objectives of the Industrial Strategy as follows:

> It is about identifying the industries that are of strategic value to our economy and supporting and promoting them through policies on trade, tax, infrastructure, skills, training, and research and development – just the same as in every other major and growing economy in the world. It is about identifying the places that have the potential to contribute towards economic growth

[36] Prime Minister's Office press release, "New Cabinet committee to tackle top government economic priority", 2 August 2016
[37] HM Government, *Building our Industrial Strategy*, January 2017, p.3
[38] HM Government, *Building our Industrial Strategy*, January 2017, p.9

> and become homes to millions of new jobs. And, because this is about meeting our economy's long term challenges, the industrial strategy will focus on creating the right institutional framework to make the strategy last for decades to come.[39]

The manifesto also states the ambition "that the UK should be the most innovative country in the world" achieved by increasing government investment in research and development via the National Productivity Investment Fund (se section below for more on this) and by ensuring that the UK "meet[s] the current OECD average for investment in R&D – that is, 2.4 per cent of GDP – within ten years, with a longer-term goal of three per cent".[40] In 2015 (latest available data), total R&D investment in the UK was 1.7% of GDP.[41]

7.3 National Productivity Investment Fund

At the November 2016 Autumn Statement the Chancellor, Philip Hammond, announced the creation of the National Productivity Investment Fund (NPIF). Over the course of the four years from 2017/18 to 2021/22, the Government has allocated £23 billion in spending for the new fund to be spread across four main areas: housing, transport, digital communications, and research and development (R&D).[42] The Government states that the NPIF will provide support for the following:

- accelerate new housing supply
- tackle congestion on the roads and ensure the UK's transport networks are fit for the future
- support the market to roll out full-fibre connections and future 5G communications, delivering a step change in broadband speed, security, and reliability
- enhance the UK's position as a world leader in science and innovation[43]

The table below, reproduced from the Autumn Statement gives breakdowns of where the funding is planned to be spent:

[39] Conservative Party manifesto 2017, pages 18-19
[40] Ibid, pages 19-20
[41] OECD, Main Science and Technology Indicators, GERD as % of GDP [accessed 9 June 2017]
[42] HM Treasury, *Autumn Statement 2016*, Cm9362, November 2016, pp25-34
[43] HM Treasury, *Autumn Statement 2016*, Cm9362, November 2016, p26, para 3.8

Table 3.1: National Productivity Investment Fund (£ million)[1]

	2017-18	2018-19	2019-20	2020-21	2021-22[4]
Housing					
Accelerated construction	285	635	665	380	*
Affordable housing[2]	1,120	1,125	880	340	*
Housing Infrastructure Fund	60	300	945	1,425	*
Transport					
Roads and local transport	365	500	430	650	*
Next generation vehicles	75	100	110	115	*
Digital railways enhancements	30	55	165	285	*
Cambridge-Milton Keynes-Oxford corridor	5	135	0	0	*
Digital Communications[3]					
Fibre and 5G investment	25	150	275	290	*
Research and Development					
Research and Development funding	425	820	1,500	2,000	*
Total	**2,390**	**3,820**	**4,970**	**5,485**	**7,000**

[1] Figures represent the total costs associated with the funding allocations announced at the Autumn Statement, including the impact on Devolved Administration budgets through the application of the Barnett formula.

[2] The affordable housing line includes the impact on Housing Association spending of £1.4 billion extra capital grant from central government to fund 40,000 new homes, and introducing tenure flexibility across the Affordable Homes Programme.

[3] Figures show PSGI impact of policies only, and do not include funding for the Digital Infrastructure Investment Fund.

[4] Capital budgets have not yet been set for 2021-22. Allocation of the £7 billion will be made in due course alongside wider capital budgets.

Source: HM Treasury.

7.4 Productivity plan (2015)

On 10 July 2015, two days after the Summer Budget, the Government published its productivity plan: *Fixing the foundations: Creating a more prosperous nation*.[44]

In his Budget speech, George Osborne, the then Chancellor, noted the UK's "weak productivity" and cited reasons for this:

> Britain still spends too much; it borrows too much, and our weak productivity shows that we do not train enough, build enough or invest enough. This we are determined to change. We will be bold in transforming education, bold in reforming welfare, bold in delivering infrastructure and bold in building the northern powerhouse.[45]

This echoed comments he made in his Mansion House speech a month earlier:

> Britain must address its poor productivity.
>
> We don't export enough; we don't train enough; we don't save enough; we don't invest enough; we don't manufacture enough; we certainly don't build enough, and far too much of the economic activity in our nation is concentrated here in the centre of London.[46]

[44] HM Treasury and BIS, *Fixing the foundations: creating a more prosperous nation*, Cm 9098, 10 July 2015

[45] HC Deb 8 July 2015, c321

[46] HM Treasury, "Mansion House 2015: Speech by the Chancellor of the Exchequer", 10 June 2015

The productivity plan comprises 15 points grouped into two sections: "Long-term investment" and "A dynamic economy". Many of these points summarise existing Government policy in the areas concerned.

In general, the plan aims to improve the UK's transport and digital infrastructure, increase investment in the economy, enhance the skills of the workforce, build more houses, move people off welfare and into work, encourage exports, and rebalance the economy away from London. The 15 points from the Government's plan are summarised below.

Long Term investment

1) Tax system: lowering corporation tax in order to incentivise investment, and reducing income tax.

2) Encourage long-term investment and individuals to save: including raising the Annual Investment Allowance to £200,000.

3) Skilled workforce: improve school performance, have more apprenticeships and improve the further education system.

4) Universities: remove the student numbers cap, change funding arrangements and open higher education market to new providers.

5) Transport: create a new roads fund by 2020/21, have a more efficient rail network, and make a decision on airport capacity in the South East.

6) Energy: investment to ensure reliable energy supply, decarbonise the energy sector, and strengthen competition in the market.

7) Digital infrastructure: improve access to superfast broadband and near universal 4G, and make it easier to roll out digital infrastructure.

8) Science and innovation: encourage industry collaboration with universities in order to commercialise research and innovation.

Dynamic economy

9) Planning: reform system to make it easier to build houses, extend Right to Buy, and reform compulsory purchase powers.

10) "Higher pay, lower welfare society": move people from welfare system to work, and introduce the National Living Wage.

11) More inclusive employment: help those with barriers to work find jobs (increasing free childcare for some, changes to benefit rules).

12) Financial services: promote stability of sector via regulators and tax system, and encourage the supply of finance for productive investment.

13) Competitive markets: cut red tape, "champion" enterprise, and introduce new rules so consumers can switch suppliers more easily.

14) Trade: focus on exports (especially to emerging markets), push for trade agreements, and improve UK Trade & Investment and export finance.

15) More balanced economy: reduce dependence on London by devolving powers and improving productivity in rural areas.

Opposition response

Shabana Mahmood, Labour's then Shadow Chief Secretary to the Treasury, responded to the Government's productivity plan by criticising the lack of substantial reforms contained in it:

> Today's document is a patchwork of existing schemes rather than a substantial reform to boost skills, business growth and wages.
>
> Working people need delivery, not more empty promises. Instead of investing in the infrastructure and skills we need, the Government are dithering on airports, have cancelled the electrification of key rail lines and have rebadged existing training as apprenticeships.[47]

Responding to the Summer Budget, two days prior to the publication of the plan, then acting Labour leader Harriet Harman attacked the Government's record on productivity:

> […] when it comes to productivity, the Chancellor's record is poor. It is not as though people are not working hard, but the things that turn their work into high productivity—skills, investment and infrastructure—are not there for them, which is why the UK produces on average 30% less per hour than workers in Germany, France and the US and output per hour in this country is 17% below the average for the G7. That is the lowest we have been in the productivity league table since 1992. It is not enough just to publish a productivity plan later in the week; we have to do it.[48]

Business, Innovation and Skills Committee inquiry

The Business, Innovation and Skills (BIS) Commons Select Committee opened an inquiry into the Government's productivity plan shortly after it was published in July 2015. The Committee's report was published on 1 February 2016.[49]

While the Committee welcomed the Government's focus on productivity it stated that the productivity plan was "more of an assortment of largely existing policies" rather than a new plan.[50]

The report also stated that the plan lacked clear timescales and specific milestones for policy implementation to which the success of its policies could be measured against. It recommended that the Government produce a supplementary document outlining its implementation plans and how it will measure the success of each policy in the plan.[51]

On 12 January 2017, the Government responded to the Committee's report. It disagrees with the Committee's view that the Productivity Plan

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[47] Labour Party press release, "Productivity plan a patchwork of existing schemes rather than substantial reform to boost skills, business growth and wages - Shabana Mahmood", 10 July 2015

[48] HC Deb 8 July 2015 c340

[49] Business, Innovation and Skills Committee, Second Report of 2015-16 Session, *The Government's Productivity Plan*, HC466, 1 February 2016

[50] *ibid.* paras 52 and 6.

[51] *ibid.* paras 10 and 52.

is not clear or focused.[52] It also cited the Government's Industrial Strategy and examples of new legislation, such as the House and Planning Act, as evidence that progress has been made in implementing the plan.

The response contained an update to the implementation of the plan, in the form of a lengthy supplementary table, pointing to progress on the plan's commitments.

Other reaction

Reaction to the Government's productivity plan was mixed, with a generally positive response to the idea that the Government is focusing on productivity and to the main aims of the plan, such as improving infrastructure, increasing skills, and having a more efficient planning system. However, some were critical of specific elements of the plan, while others questioned the ability of the Government to actually implement the proposals.

A selection of responses to the plan follows.

The Confederation of British Industry (CBI) was positive in its assessment of the plan citing the Government's business tax policies as positive for business investment:

> Productivity is a missing piece of the growth puzzle.
>
> This ambitious plan from the Government will help our economy move up another gear. We've already seen progress in the Budget with lowering Corporation Tax, movement towards a business tax roadmap and the new permanent Annual Investment Allowance – all will help increase investment by creating certainty for businesses.[53]

The Institute of Directors (IoD) said it welcomed the plan, in particular what it views as long-term proposals to improve investment:

> It encouraging to see the Government set out proposals which are long-term in nature and will help businesses well beyond the life of this Parliament. Companies' investment horizons span decades not months and years, and it is vital that government policy recognises this.[54]

The Trades Union Congress (TUC) was critical of the plan, citing what it believes is the Government's lack of long-term capital investment:

> There are no shortcuts to higher productivity. It's only achieved by long-term investment and an embedded culture of positive labour relations. The best businesses are those where employers and the workforce are productivity partners, like our world leading automotive and chemical industries. When workers are engaged and getting a fair share from growth, they deliver better results.[55]

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[52] Business, Energy and Industrial Strategy Committee, *The Government's Productivity Plan: Government Response to the Business, Innovation and Skills Committee's Second Report of Session 2015–16*, HC931, 12 January 2017

[53] John Cridland, CBI Director-General, quoted in CBI press release, "CBI response to Government productivity plan", 10 July 2015

[54] James Sproule, Chief Economist at the Institute of Directors, quoted in IoD press release, "IoD – Boosting productivity key for long-term growth", 10 July 2015

[55] Frances O'Grady, TUC General Secretary, quoted in TUC press release, "Sharing growth with workers will help boost productivity, says TUC", 10 July 2015

The Chartered Institute of Personnel and Development (CIPD), an association of human resources managers, said the plan was "fatally undermined" by insufficient measures to improve skills. Its chief economist was critical of the lack of attention the plan gives to improving the skills of the existing workforce (in contrast to the plan's focus on people in university and in apprenticeships).[56]

Anna Valero and Professor John Van Reenen of the London School of Economics believe the plan is broadly right but question whether it is radical or coherent enough to make a difference:

> The Plan identifies the chronic problems which need to be addressed to get our productivity back on track, and sets out the government's solutions. Overall, the analysis and priorities seem broadly right and there are a number of positive steps. For example, the emphasis on planning reforms (especially on housing), road infrastructure and vocational skills. However, much of the Plan simply places existing policies into eight drivers of productivity growth. Given the fact that UK output per hour is around 30 per cent lower than the US, France and Germany, is it really radical and coherent enough to yield the kind of growth we need to catch up with our peers?
>
> […]
>
> Although there are many individually sensible policies, it is difficult to discern a clear growth *strategy* emerging from the Plan. Without such a vision, it is likely that shorter term considerations will come to dominate, especially as the parliamentary term wears on.[57]

[56] CIPD press release, "Productivity plan fatally undermined by weak skills strategy", 10 July 2015; and CIPD, Mark Beaston's blog, "Government productivity plan is built on sand", 22 July 2015

[57] Anna Valero and John Van Reenen, "Productivity Plan: A sound framework, but gaps in policy persist. More is needed to get productivity growing again", LSE politics and policy blog, 17 July 2015

8. Appendix – data tables

The tables below show labour productivity in the whole UK economy, UK regional productivity and international comparisons of productivity:

Table 1: Output per hour worked in the UK

	Index	Annual change		Index	Annual change
	2013=100	*%*		*2013=100*	*%*
1996	80.5	1.5	2012 Q2	100.4	-1.4
1997	81.4	1.1	2012 Q3	100.5	-0.9
1998	83.5	2.6	2012 Q4	100.0	-1.2
1999	85.6	2.5	2013 Q1	100.2	-0.7
2000	88.7	3.6	2013 Q2	100.2	-0.2
2001	89.9	1.4	2013 Q3	99.6	-1.0
2002	92.0	2.3	2013 Q4	100.0	0.0
2003	94.9	3.1	2014 Q1	100.1	-0.1
2004	96.2	1.4	2014 Q2	100.3	0.0
2005	98.0	1.9	2014 Q3	100.8	1.3
2006	99.8	1.8	2014 Q4	101.2	1.3
2007	101.4	1.6	2015 Q1	101.2	1.1
2008	100.4	-0.9	2015 Q2	101.8	1.5
2009	98.8	-1.6	2015 Q3	102.0	1.2
2010	100.4	1.6	2015 Q4	101.0	-0.3
2011	101.3	0.9	2016 Q1	101.5	0.3
2012	100.4	-0.9	2016 Q2	101.8	0.0
2013	100.0	-0.4	2016 Q3	101.9	-0.1
2014	100.6	0.6	2016 Q4	102.4	1.4
2015	101.5	0.9	2017 Q1	101.8	0.3
2016	101.9	0.4	2012 Q2*	101.8	0.0

Source: ONS series LZVB and LZVD; *estimate from 'flash' Q2 2017 release

Table 2: UK regional productivity (GVA per hour worked)

Index where UK=100 in each year

	North East	North West	Yorks & Humber	East Midlands	West Midlands	East	London	South East	South West	England	Wales	Scotland	Northern Ireland
1997	86.8	89.7	89.1	91.8	90.6	103.4	128.4	108.8	94.1	101.6	86.8	94.8	87.5
1998	85.7	91.9	89.6	90.3	90.7	102.8	126.8	110.7	93.9	101.9	84.6	94.4	82.2
1999	87.2	91.8	89.0	88.0	94.0	103.8	123.9	111.3	95.2	102.1	85.4	92.8	80.6
2000	85.9	89.2	88.0	87.7	91.9	103.4	125.8	111.5	96.9	102.0	85.6	92.3	83.3
2001	88.9	91.5	88.7	89.2	91.1	103.3	123.6	112.2	97.0	102.3	83.1	90.6	83.8
2002	87.9	90.9	89.0	90.2	90.7	104.1	125.3	112.2	96.9	102.5	82.2	90.3	80.2
2003	86.6	91.4	90.3	90.1	90.0	104.9	124.0	112.4	97.6	102.5	83.4	90.3	80.6
2004	87.9	91.7	90.1	90.0	90.7	102.9	126.4	109.6	96.1	102.1	84.9	93.4	78.9
2005	89.2	91.9	89.8	87.9	90.2	102.5	127.9	109.5	95.7	102.2	83.6	93.2	80.0
2006	87.8	93.5	90.5	89.1	89.3	102.3	128.0	109.6	94.0	102.2	83.5	92.9	81.4
2007	86.6	92.7	91.4	87.1	88.1	101.3	130.1	108.6	94.6	102.1	83.3	92.5	84.4
2008	86.0	92.9	91.5	88.8	88.1	101.7	129.1	108.4	94.3	102.3	82.5	92.4	81.9
2009	85.1	93.2	90.2	87.0	86.4	100.2	130.2	108.6	93.9	101.8	81.9	96.8	81.5
2010	85.4	91.4	88.4	87.1	87.3	100.3	131.1	109.9	94.3	102.0	80.8	96.1	80.9
2011	87.4	90.5	87.5	87.4	88.7	99.6	133.1	107.9	91.6	101.9	82.0	95.3	82.2
2012	88.4	90.5	87.7	88.0	87.9	98.4	130.9	107.7	92.9	101.7	84.0	95.7	83.5
2013	87.7	91.6	87.9	89.3	87.4	99.2	128.9	109.0	92.1	101.8	83.4	96.1	81.1
2014	88.0	88.8	86.0	90.3	87.9	100.1	130.9	108.2	92.2	101.8	81.2	97.0	79.3
2015	87.6	90.1	86.1	86.9	85.3	99.2	131.6	109.3	92.8	101.7	80.6	98.3	80.9

Source: ONS, Labour Productivity: Jan to Mar 2017, 5 Jul 2017

Table 3: GDP per hour worked, International comparisons

UK = 100 in each year

	Canada	France	Germany	Italy	Japan	UK	US	G7	G7 exc. UK
1995	109	126	132	128	91	100	125	116	117
1996	105	122	130	123	90	100	123	114	115
1997	105	123	129	123	89	100	123	113	114
1998	106	126	129	124	89	100	125	115	116
1999	107	126	132	122	90	100	127	116	118
2000	103	126	128	118	87	100	122	113	114
2001	102	127	129	116	87	100	123	113	114
2002	98	127	127	111	86	100	120	111	112
2003	99	123	128	110	86	100	122	111	112
2004	96	118	128	105	86	100	122	111	112
2005	102	123	127	106	88	100	126	114	115
2006	100	124	124	106	86	100	123	112	113
2007	101	126	126	109	88	100	124	113	114
2008	100	125	126	110	87	100	124	113	114
2009	102	129	129	113	88	100	129	116	118
2010	101	128	128	111	88	100	128	116	117
2011	101	129	132	112	88	100	128	116	118
2012	100	128	134	113	89	100	129	117	118
2013	102	132	135	113	90	100	128	117	119
2014	103	129	137	112	89	100	129	117	119
2015	99	129	136	112	90	100	129	117	119

Source: ONS, *International comparisons of labour productivity - Final Estimates, 2015 (based on current price GDP)*

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